

ABSTRACT OF THE DISCLOSURE

A method and corresponding system for tracking variations in distance D calculated from time-of-flight measurements of a sequence of pulses of a pressure wave oscillation from a transmitter to a receiver identifies a state of synchronous operation by obtaining at least two time-of-flight measurements derived from successive pressure wave pulses which satisfy given synchronicity criteria. Successive time-of-flight measurements are then monitored to identify a shifted time-of-flight measurement which varies by at least half of the wave period from a predicted time-of-flight value calculated from a number of preceding time-of-flight measurements. A shift factor is then identified corresponding to an integer multiple of the wave period by which the shifted time-of-flight measurement must be corrected to obtain a corrected time-of-flight measurement falling within half of the wave period from the predicted time-of-flight value. The distance D calculated from the shifted time-of-flight measurement is then corrected by the product of the shift factor and the pressure wave wavelength.

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